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Taxation

TAXATION

Government requires money for the various socio-economic projects such as construction of hospitals, schools, roads and bridges etc. and provision of social services like national security, provision of salaries for its employees etc. To create funds the government imposes different type of charges on income of a person and corporate entities, products and services etc. called **taxes**.

The **taxation** is the means by which a government or its agency levies taxes on its citizens and business entities.

The taxes can be classified in two main categories:

1. Indirect tax
2. Direct tax

Indirect tax. The tax which effects the person or group of persons indirectly is called **indirect tax**. For example, sales tax, service tax, value added tax (VAT), excise duty, custom duty etc.

From year 2017 all these indirect taxes are replaced by Goods and Services Tax (GST). It is the tax levied on goods and services rendered.

Direct tax. The tax which is imposed directly on a tax payer is called direct tax. For example income tax, property tax, gift tax etc.

In this chapter we shall study about GST and income tax only.

Goods and Services Tax (GST) is an indirect tax levied on the supply of goods and services *i.e.* on the sale of goods and rendering services. It is a nation-wide tax which subsumes several indirect taxes levied by the Centre and State Governments and is based on the principle of 'One nation one tax'.

Central level taxes merged into GST are – Excise Duty, Custom Duty, Service Tax and Central Sales Tax. State level taxes merged into GST are – Octroi and Entry Tax, Value Added Tax (VAT), Entertainment Tax, Taxes on Lottery and Luxury Tax etc.

GST creates a semblance of common market where every supply of goods or services or both irrespective of where it takes place has common treatment and a defined common tax rate throughout the chain.

GOODS AND SERVICES TAX

Goods and Services Tax (abbreviated GST) is an indirect tax levied on the supply of goods and services.

Some terms related to GST

1. **Dealer.** *Any person who buys goods or services for resale is known as a* ***dealer*** (or ***trader***). A dealer can be a firm or a company.
2. **Intra-state sales.** *Sales of goods and services within the same state (or Union Territory) are called* ***intra-state sales.***
3. **Inter-state sales.** *Sales of goods and services outside the state (or Union Territory) are called* ***inter-state sales.***

4. **Input GST and Output GST.** GST is paid by dealers on purchase of goods and services and is collected from customers on sale of goods and services. *GST paid by a dealer is called* **Input GST** *and GST collected from a customer is called* **Output GST**.

5. **Types of taxes under GST.** There are three taxes applicable under GST:

   (*i*) ***Central Goods and Services Tax (CGST).***

   (*ii*) ***State Goods and Services Tax (SGST)*** or Union Territory Goods and Services Tax (UTGST).

Both these taxes are levied on intra-state sales *i.e.* on sales of goods and services within the same state. In intra-state sales, GST is divided equally among Centre and State Governments.

For example, a dealer in Karnataka sells goods worth ₹ 3000 to a dealer (or consumer) in Karnataka. Suppose GST rate is 12% on these goods, then GST will comprise of CGST @ 6% and SGST @ 6%. The seller will collect 6% of ₹ 3000 *i.e.* ₹ 180 as CGST which will go to the Central Government and 6% of ₹ 3000 *i.e.* ₹ 180 which will go to the State Government of Karnataka. Thus the dealer collects 12% of ₹ 3000 *i.e.* ₹ 360 as total GST, half of which goes to the Central Government and the other half goes to the State Government of Karnataka.

   (*iii*) ***Integrated Goods and Services Tax (IGST).***

IGST is levied on inter-state sales *i.e.* on sales of goods and services outside the state. It is also levied on import of goods and services into India and on export of goods and services outside India. IGST goes to the Central Government.

For example, a dealer from Madhya Pradesh sells goods worth ₹ 50000 to a dealer in Punjab. Suppose GST rate is 18% on these goods, then the seller will collect 18% of ₹ 50000 *i.e.* ₹ 9000 as IGST and the entire amount of IGST will go to the Central Government.

GST rate structure

Goods and Services are divided into five slabs for collection of GST.

(*i*)	Essential items including (unpacked) food	0%
(*ii*)	Common use items	5%
(*iii*)	Standard rate	12%
(*iv*)	Maximum goods and all services standard rate	18%
(*v*)	Luxury and sin (tobacco) items	28%

Input GST Credit

Every dealer registered under GST is entitled to set off Input GST (*i.e.* GST paid) against output GST (*i.e.* GST collected) as follows:

Input GST Credit	*Output GST*
CGST Credit	First CGST, then IGST
SGST/UTGST Credit	First SGST/UTGST, then IGST
IGST Credit	First IGST, second CGST, then SGST/UTGST
CGST credit cannot be set off against SGST/UTGST and vice-versa.	

Both centre and states allow to set off Input GST against Output GST. Every dealer has to pay net GST (output GST – input GST) on the sale and purchase of goods and services.

Objectives and advantages of GST

(*i*) ***Ease of doing business:*** GST harmonizes tax administration between the Centre and States which will improve the ease of doing business.

(*ii*) ***Reduce tax evasion:*** GST has e-compliance mechanism. Every tax payer registered under GST has to file GST return electronically for every transaction (purchase and sale) and will match input GST credit against output GST and pay net GST which will reduce tax evasion.

(*iii*) The tax system becomes more transparent, regular and predictable.

ILLUSTRATIVE EXAMPLES

Example 1. Manufacturer A sells a washing machine to a dealer B for ₹12500. The dealer B sells it to a consumer at a profit of ₹1500. If the sales are intra-state and the rate of GST is 12%, find

(i) *the amount of tax (under GST) paid by the dealer B to the Central Government.*

(ii) *the amount of tax (under GST) received by the State Government.*

(iii) *the amount that the consumer pays for the machine.*

Solution. As the sales are intra-state and the rate of GST is 12%, so GST comprises of 6% as CGST and 6% as SGST. Manufacturer A sells the washing machine to dealer B for ₹ 12500, amount of GST collected by manufacturer A from dealer B (or paid by dealer B to A):

$$\text{CGST} = 6\% \text{ of } ₹\ 12500 = ₹\left(\frac{6}{100}\times 12500\right) = ₹\ 750,$$

$$\text{SGST} = 6\% \text{ of } ₹\ 12500 = ₹\left(\frac{6}{100}\times 12500\right) = ₹\ 750.$$

∴ Amount of input GST of dealer B:

input CGST = ₹ 750, input SGST = ₹ 750.

Manufacturer A will pay ₹ 750 as CGST and ₹ 750 as SGST.

Since the dealer B sells the washing machine to a consumer at a profit of ₹ 1500, the selling price of machine by dealer B (or cost price of machine to the consumer)

= ₹ 12500 + ₹ 1500 = ₹ 14000.

The amount of GST collected by dealer B (or paid by consumer):

$$\text{CGST} = 6\% \text{ of } ₹\ 14000 = ₹\left(\frac{6}{100}\times 14000\right) = ₹\ 840,$$

$$\text{SGST} = 6\% \text{ of } ₹\ 14000 = ₹\left(\frac{6}{100}\times 14000\right) = ₹\ 840.$$

∴ Amount of output GST of dealer B:

output CGST = ₹ 840, output SGST = ₹ 840.

(i) Amount of tax (under GST) paid by dealer B to the Central Government

= CGST paid by dealer B to the Central Government

= Output CGST – input CGST

= ₹ 840 – ₹ 750 = ₹ 90.

(ii) Amount of SGST paid by dealer B = Output SGST – input SGST

= ₹ 840 – ₹ 750 = ₹ 90

Amount of tax (under GST) received by the State Government

= SGST paid by A + SGST paid by B

= ₹ 750 + ₹ 90 = ₹ 840.

(iii) The amount which the consumer pays for the machine

= Cost price of machine to consumer + GST paid by consumer

= ₹ 14000 + CGST paid by consumer + SGST paid by consumer

= ₹ 14000 + ₹ 840 + ₹ 840 = ₹ 15680.

Example 2. *A shopkeeper buys an article whose printed price is ₹4000 from a wholesaler at a discount of 20% and sells it to a consumer at the printed price. If the sales are intra-state and the rate of GST is 12%, find*

(i) *the price of the article inclusive of GST at which the shopkeeper bought it.*

(ii) *the amount of tax (under GST) paid by the shopkeeper to the State Government.*

(iii) *the amount of tax (under GST) received by the Central Government.*

(iv) *the amount which the consumer pays for the article.*

Solution. As the sales are intra-state and the rate of GST is 12%, so GST comprises of CGST at 6% and SGST at 6%.

(i) Printed price = ₹4000, rate of discount = 20%.

$$\text{Amount of discount} = 20\% \text{ of } ₹4000 = ₹\left(\frac{20}{100} \times 4000\right) = ₹800.$$

∴ The price of the article which the shopkeeper paid to the wholesaler

$$= ₹4000 - ₹800 = ₹3200.$$

Amount of GST paid by the shopkeeper to the wholesaler:

$$\text{CGST} = 6\% \text{ of } ₹3200 = ₹\left(\frac{6}{100} \times 3200\right) = ₹192.$$

$$\text{SGST} = 6\% \text{ of } ₹3200 = ₹192.$$

∴ The price of the article inclusive of GST at which the shopkeeper bought it

$$= ₹3200 + ₹192 + ₹192 = ₹3584.$$

(ii) The wholesaler will pay ₹192 as CGST to the Central Government and ₹192 as SGST to the State Government.

Amount of input GST of the shopkeeper:

$$\text{CGST} = ₹192;\ \text{SGST} = ₹192.$$

The shopkeeper sells the article to a consumer at printed price of ₹4000.

Amount of GST collected by the shopkeeper (or paid by consumer):

$$\text{CGST} = 6\% \text{ of } ₹4000 = ₹\left(\frac{6}{100} \times 4000\right) = ₹240,$$

$$\text{SGST} = 6\% \text{ of } ₹4000 = ₹240.$$

Amount of output GST of the shopkeeper:

$$\text{CGST} = ₹240;\ \text{SGST} = ₹240$$

Amount of tax (under GST) paid by the shopkeeper to the State Government

= SGST paid by the shopkeeper to the State Government

= Output SGST – input SGST

= ₹240 – ₹192 = ₹48.

(iii) Amount of CGST paid by the shopkeeper = Output CGST – input CGST

= ₹ 240 – ₹ 192 = ₹ 48.

The amount of tax (under GST) received by the Central Government

= CGST paid by wholesaler + CGST paid by shopkeeper

= ₹192 + ₹48 = ₹240.

(iv) The amount which the consumer pays for the article

= Cost price of article to consumer + GST paid by consumer

= ₹4000 + CGST paid by consumer + SGST paid by consumer

= ₹4000 + ₹240 + ₹240 = ₹4480.

Example 3. *The printed price of an air conditioner (AC) is ₹ 45000. The wholesaler allows a discount of 10% to a dealer. The dealer sells the air conditioner to a consumer at a discount of 4% on the marked price. If the sales are intra-state and rate of GST is 18%, find:*

(i) *the amount of tax (under GST) paid by the dealer to Central and State Governments.*

(ii) *the amount of tax (under GST) received by Central and State Governments.*

(iii) *the total amount (inclusive of tax) paid by the consumer for the air conditioner.*

Solution. As all the sales are intra-state and the rate of GST is 18%, so GST comprises of CGST at 9% and SGST at 9%.

(i) As the wholesaler sells the air conditioner to a dealer at a discount of 10%, the selling price of the air conditioner by the wholesaler (excluding tax)

$$= ₹\left(1-\frac{10}{100}\right) \times 45000 = ₹\left(\frac{9}{100}\times 45000\right) = ₹\,40500.$$

$\therefore$ Cost price of AC to the dealer (excluding tax) = ₹ 40500.

Amount of GST collected by the wholesaler (or paid by dealer to wholesaler):

$$CGST = 9\% \text{ of } ₹\,40500 = ₹\left(\frac{9}{100}\times 40500\right) = ₹\,3645;$$

$$SGST = 9\% \text{ of } ₹\,40500 = ₹\,3645.$$

$\therefore$ The wholesaler will pay ₹ 3645 as CGST to the Central Government and ₹ 3645 as SGST to the State Government.

Amount of input GST of the dealer:

CGST = ₹ 3645; SGST = ₹ 3645.

As the dealer sells the air conditioner to a consumer at a discount of 4% on the marked price, the selling price of the air conditioner by the dealer (excluding tax)

$$= ₹\left(1-\frac{4}{100}\right) \times 45000 = ₹\left(\frac{24}{25}\times 45000\right) = ₹\,43200.$$

$\therefore$ Cost price of AC to the consumer (excluding tax) = ₹ 43200.

Amount of GST collected by the dealer (or paid by consumer):

$$CGST = 9\% \text{ of } ₹\,43200 = ₹\left(\frac{9}{100}\times 43200\right) = ₹\,3888;$$

$$SGST = 9\% \text{ of } ₹\,43200 = ₹\,3888.$$

Amount of output GST of the dealer:

CGST = ₹ 3888, SGST = ₹ 3888.

Amount of tax (under GST) paid by dealer to the Central Government

= Output CGST – input CGST

= ₹ 3888 – ₹ 3645 = ₹ 243

Amount of tax (under GST) paid by dealer to the State Government

= Output SGST – input SGST

= ₹ 3888 – ₹ 3645 = ₹ 243.

(ii) The amount of tax (under GST) received by the Central Government

= CGST paid by wholesaler + CGST paid by dealer

= ₹ 3645 + ₹ 243 = ₹ 3888

The amount of tax (under GST) received by the State Government

= SGST paid by wholesaler + SGST paid by dealer

= ₹ 3645 + ₹ 243 = ₹ 3888

(iii) The total amount (inclusive of tax) paid by the consumer for the air conditioner

= Cost of AC + GST paid by consumer

= ₹ 43200 + CGST paid by consumer + SGST paid by consumer

= ₹ 43200 + ₹ 3888 + ₹ 3888 = ₹ 50976.

Example 4. *A retailer buys a TV from a manufacturer for ₹ 25000. He marks the price of the TV 20% above his cost price and sells it to a consumer at 10% discount on the marked price. If the sales are intra-state and rate of GST is 12%, find:*

(i) the marked price of the TV.

(ii) Consumer's is cost price of TV inclusive of tax (under GST).

(iii) GST paid by the retailer to the Central and State Governments.

Solution. The cost price of the TV which the retailer pays to the manufacturer = ₹ 25000

(*i*) As the retailer marks the price of TV 20% above his cost price,

$\therefore$ the marked price of the TV $= ₹\left(1+\frac{20}{100}\right) \times 25000.$

$= ₹\left(\frac{120}{100} \times 25000\right) = ₹30000.$

(*ii*) As the sales are intra-state and the rate of GST is 12%, so GST comprises of CGST at 6% and SGST at 6%.

As the retailer sells the TV to a consumer at 10% discount on the marked price, selling price of the TV by the retailer

$= ₹\left(1-\frac{10}{100}\right) \times 30000 = ₹\left(\frac{9}{10} \times 30000\right) = ₹\ 27000.$

Amount of GST collected by retailer from consumer (or paid by consumer to retailer):

$$\text{CGST} = 6\% \text{ of } ₹\,27000 = ₹\left(\frac{6}{100} \times 27000\right) = ₹\,1620,$$

$$\text{SGST} = 6\% \text{ of } ₹\,27000 = ₹\,1620.$$

$\therefore$ Consumer's cost price of TV inclusive of tax (under GST)

= Cost price of TV to consumer + GST paid by consumer

= ₹ 27000 + CGST paid by consumer + SGST paid by consumer

= ₹ 27000 + ₹ 1620 + ₹ 1620

= ₹ 30240.

(*iii*) Amount of GST collected by manufacturer from retailer:

$$\text{CGST} = 6\% \text{ of } ₹\,25000 = ₹\left(\frac{6}{100} \times 25000\right) = ₹\,1500,$$

$$\text{SGST} = 6\% \text{ of } ₹\,25000 = ₹\,1500.$$

Amount of input GST of the retailer:

CGST = ₹ 1500, SGST = ₹ 1500

Amount of output GST of the retailer:

CGST = ₹ 1620, SGST = ₹ 1620

GST paid by the retailer to the Central Government

= Output CGST – input CGST

= ₹ 1620 – ₹ 1500 = ₹ 120

GST paid by the retailer to the State Government

= Output SGST – input SGST

= ₹ 1620 – ₹ 1500 = ₹ 120

$\therefore$ Total GST paid by the retailer to the Central and State Governments

= ₹ 120 + ₹ 120 = ₹ 240.

Example 5. *The printed price of a carpet is ₹ 2500. A wholesaler in West Bengal buys the carpet from a manufacturer in Maharashtra at a discount of 12% on the printed price. The wholesaler sells the carpet to a retailer in Bihar at 32% above the marked price. If the rate of GST on the carpet is 5%, find:*

(i) the price inclusive of tax (under GST) at which the wholesaler bought the carpet.

(ii) the price inclusive of tax (under GST) at which the retailer bought the carpet.

(iii) the tax (under GST) paid by the wholesaler to the Government.

(iv) the tax (under GST) received by the Central Government.

Solution. The printed price of the carpet is ₹ 2500. The rate of GST on the sale or purchase of the carpet is 5%. Here both the given sales from manufacturer to wholesaler and wholesaler to retailer are inter-state, so IGST is levied on these sales at 5%.

(*i*) As the wholesaler buys the carpet from a manufacturer at 12% discount on the printed price,

∴ cost price of the carpet to the wholesaler

$$= ₹\left(1-\frac{12}{100}\right)\times 2500 = ₹\left(\frac{22}{25}\times 2500\right) = ₹\,2200.$$

Amount of IGST collected by manufacturer from wholesaler (or paid by wholesaler to manufacturer)

$$= 5\% \text{ of } ₹\,2200 = ₹\left(\frac{5}{100}\times 2200\right) = ₹\,110.$$

The price inclusive of tax (under GST) at which the wholesaler bought the carpet

= Cost of carpet to wholesaler + IGST paid by wholesaler

= ₹ 2200 + ₹ 110 = ₹ 2310.

The manufacturer will pay ₹ 110 as IGST to the Central Government.

Input IGST of the wholesaler = ₹ 110.

(*ii*) As the wholesaler sells the carpet to a retailer at 32% above the marked price,

the selling price of the carpet by the wholesaler

$$= ₹\left(1+\frac{32}{100}\right)\times 2500 = ₹\left(\frac{33}{25}\times 2500\right) = ₹\,3300.$$

∴ Cost price (excluding tax) of the carpet to the retailer = ₹ 3300.

Amount of IGST collected by wholesaler from retailer (or paid by retailer to wholesaler)

$$= 5\% \text{ of } ₹\,3300 = ₹\left(\frac{5}{100}\times 3300\right) = ₹\,165.$$

The price inclusive of tax (under GST) at which the retailer bought the carpet

= Cost of carpet to retailer + IGST paid by retailer

= ₹ 3300 + ₹ 165 = ₹ 3465.

(*iii*) Output IGST of the wholesaler = ₹ 165.

The tax (under GST) paid by the wholesaler to the Central Government

= Output IGST − input IGST

= ₹ 165 − ₹ 110 = ₹ 55.

(*iv*) The tax (under GST) received by the Central Government

= IGST received from manufacturer + IGST received from wholesaler

= ₹ 110 + ₹ 55 = ₹ 165.

Note

None of the State Governments (Maharashtra or West Bengal or Bihar) gets any tax (under GST) on the above said sales of the carpet. The whole tax (under GST) on the sales of the carpet goes to the Central Government.

Example 6. *A shopkeeper in Rajasthan buys an article at the printed price of ₹ 40000 from a wholesaler in Delhi. The shopkeeper sells the article to a consumer in Rajasthan at a profit of 25% on the basic cost price. If the rate of GST is 18%, find*

(i) *the price of the article inclusive of tax (under GST) at which the shopkeeper bought it.*

(ii) *the amount of tax (under GST) paid by the shopkeeper to Government.*

(iii) *the amount of tax (under GST) received by Delhi Government.*

(iv) *the amount of tax (under GST) received by Central Government.*

(v) *the amount which the consumer pays for the article.*

Solution. (*i*) As the shopkeeper buys an article for ₹ 40000 from a wholesaler in Delhi, so this sale is inter-state.

Rate of GST is 18%. On this sale IGST is levied at 18%.

IGST collected by wholesaler from shopkeeper

$$= 18\% \text{ of ₹ } 40000 = ₹\left(\frac{18}{100} \times 40000\right) = ₹\, 7200.$$

∴ The price of the article inclusive of tax (under GST) at which the shopkeeper bought it

= Cost price of article to shopkeeper + GST paid by the shopkeeper

= ₹ 40000 + IGST paid by shopkeeper to wholesaler

= ₹ 40000 + ₹ 7200 = ₹ 47200.

(*ii*) The wholesaler will pay ₹ 7200 as IGST to the Central Government.

The amount of input IGST of the shopkeeper = ₹ 7200.

The shopkeeper sells the article to a consumer at a profit of 25% on the basic cost price, the selling price of article by the shopkeeper

$$= ₹\left(1+\frac{25}{100}\right) \times 40000 = ₹\left(\frac{5}{4} \times 40000\right) = ₹\, 50000.$$

As the shopkeeper sells the article to a consumer in Rajasthan, so this sale is intra-state.

∴ GST comprises of CGST at 9% and SGST at 9%.

Amount of GST collected by shopkeeper from consumer:

CGST = 9% of ₹ 50000 = ₹ 4500,

SGST = 9% of ₹ 50000 = ₹ 4500.

Amount of output GST of the shopkeeper:

CGST = ₹ 4500, SGST = ₹ 4500.

Amount of tax (under GST) paid by the shopkeeper to Government:

First set off ₹ 4500 input IGST against ₹ 4500 output CGST.

Then set off the balance ₹ 2700 (₹ 7200 – ₹ 4500) input IGST against output SGST

∴ SGST paid by the shopkeeper to the State Government (Rajasthan)

= output SGST – balance of input IGST

= ₹ 4500 – ₹ 2700 = ₹ 1800.

$\therefore$ Net tax (under GST) paid by shopkeeper to Government:

No tax is paid to the Central Government

Tax paid to Rajasthan Government = ₹ 1800.

(iii) Amount of tax (under GST) received by Delhi Government is NIL.

(iv) Amount of tax (under GST) received by the Central Government

= IGST received from wholesaler + CGST received from shopkeeper

= ₹ 7200 + NIL = ₹ 7200

(v) The amount which the consumer pays for the article

= Cost price to consumer + GST paid by consumer

= ₹ 50000 + CGST paid by consumer + SGST paid by consumer

= ₹ 50000 + ₹ 4500 + ₹ 4500 = ₹ 59000.

Example 7. *Ms. Chawla goes to a shop to buy a leather coat which costs ₹ 885 (list price). The rate of GST is 18%. She tells the shopkeeper to reduce the price to such an extent that she has to pay ₹ 885, inclusive of GST. Find the reduction needed in the price of the coat.*

Solution. Let the reduced price of the leather coat be ₹x.

Amount of GST on ₹x = 18% of ₹x = ₹ $\frac{18}{100}x$.

$\therefore$ The amount to be paid by Ms. Chawla for the coat

$$= ₹x + ₹\frac{18}{100}x = ₹\left(1+\frac{18}{100}\right)x = ₹\frac{59}{50}x$$

According to given, $\frac{59}{50}x = 885$

$\Rightarrow x = \frac{50}{59} \times 885 = 50 \times 15 = 750.$

$\therefore$ The reduced price of the leather coat = ₹750.

Hence, the reduction needed in the price of coat = ₹885 – ₹750 = ₹135.

Note

If nothing is mentioned about sale (intra-state or inter-state), we shall take the sale to be an intra-state sale.

Example 8. *The price of a bicycle is ₹ 3136 inclusive of tax (under GST) at the rate of 12% on its listed price. A buyer asks for a discount on the listed price so that after charging GST, the selling price becomes equal to the listed price. Find the amount of discount which the seller has to allow for the deal.*

Solution. Let the listed price of the bicycle be ₹P.

Amount of GST on ₹P = 12% of ₹P = ₹ $\frac{3}{25}$P.

Selling price of the bicycle including tax = ₹P + ₹$\frac{3}{25}$P = ₹$\frac{28}{25}$ P.

According to given, $\frac{28}{25}P = 3136$

$\Rightarrow P = \frac{25}{28} \times 3136 = 25 \times 112 = 2800.$

$\therefore$ The list price of the bicycle = ₹ 2800.

Let the amount of discount be ₹x.

$\therefore$ The reduced price of the bicycle = ₹(2800 – x).

Amount of GST on ₹(2800 – x) = 12% of ₹(2800 – x)

$$= ₹\frac{12}{100} \times (2800 - x) = ₹\frac{3}{25}(2800 - x)$$

$\therefore$ New selling price of the bicycle including GST

$$= ₹(2800 - x) + ₹\frac{3}{25}(2800 - x) = ₹\frac{28}{25}(2800 - x).$$

According to given, $\frac{28}{25}(2800 - x) = 2800$

$\Rightarrow 2800 - x = 2500 \Rightarrow x = 300.$

$\therefore$ The amount of discount = ₹300.

Example 9. *A shopkeeper buys an article whose list price is ₹ 4500 at some rate of discount from a wholesaler. He sells the article to a consumer at the list price and charges GST at the rate of 12%. If the sales are intra-state and the shopkeeper has to pay tax (under GST) of ₹ 27, to the State Government, find the rate of discount at which he bought the article from the wholesaler.*

Solution. The sales are intra-state and the rate of GST is 12%, so GST comprises of CGST at 6% and SGST at 6%.

Let the amount of discount be ₹x.

Selling price of the article (excluding tax) by the wholesaler

$$= \text{listed price} - \text{discount} = ₹\,(4500 - x).$$

Amount of GST collected by the wholesaler from the shopkeeper:

$$\text{CGST} = 6\% \text{ of } ₹\,(4500 - x) = ₹\left(\frac{6}{100} \times (4500 - x)\right)$$

$$= ₹\left(270 - \frac{3}{50}x\right),$$

$$\text{SGST} = 6\% \text{ of } ₹\,(4500 - x) = ₹\left(270 - \frac{3}{50}x\right)$$

Input GST of shopkeeper:

Input CGST = ₹$\left(270 - \frac{3}{50}x\right)$, input SGST = ₹$\left(270 - \frac{3}{50}x\right)$

The shopkeeper sells the article to a consumer at the list price *i.e.* for ₹ 4500.

Amount of GST collected by the shopkeeper from the consumer:

$$\text{CGST} = 6\% \text{ of } ₹\,4500 = ₹\left(\frac{6}{100} \times 4500\right) = ₹\,270,$$

$$\text{SGST} = 6\% \text{ of } ₹\,4500 = ₹\,270.$$

Output GST of shopkeeper:

Output CGST = ₹ 270, output SGST = ₹ 270.

$\therefore$ The amount of tax (under GST) paid by the shopkeeper to the State Government

= Output SGST – input SGST

$$= ₹\,270 - ₹\left(270 - \frac{3}{50}x\right) = ₹\frac{3}{50}x.$$

According to given, $\frac{3}{50}x = 27 \Rightarrow x = 450.$

$\therefore$ The amount of discount = ₹ 450.

Thus, the shopkeeper gets a discount of ₹ 450 from the wholesaler.

$$\therefore \text{ Rate of discount } = \left(\frac{\text{amount of discount}}{\text{printed price of article}} \times 100\right)\%$$

$$= \left(\frac{450}{4500} \times 100\right)\% = 10\%$$

Example 10. *A shopkeeper sells an article at the listed price of ₹ 1500. The rate of GST on the article is 18%. If the sales are intra-state and the shopkeeper pays a tax (under GST) of ₹ 27 to the Central Government, find the amount inclusive of tax at which the shopkeeper purchased the article from the wholesaler.*

Solution. Sales are intra-state and the rate of GST is 18%, so GST comprises of CGST at 9% and SGST at 9%.

Let the shopkeeper buy the article from the wholesaler for ₹x (excluding tax).

Amount of GST paid by the shopkeeper to wholesaler:

$$\text{CGST} = 9\% \text{ of } ₹\, x = ₹\, \frac{9}{100}x,$$

$$\text{SGST} = 9\% \text{ of } ₹\, x = ₹\, \frac{9}{100}x.$$

$\therefore$ Input CGST of the shopkeeper = ₹ $\frac{9}{100}x$.

The shopkeeper sells the article at the list price of ₹ 1500.

Amount of GST collected by the shopkeeper:

$$\text{CGST} = 9\% \text{ of } ₹1500 = ₹\left(\frac{9}{100} \times 1500\right) = ₹135,$$

$$\text{SGST} = 9\% \text{ of } ₹1500 = ₹135.$$

$\therefore$ Output CGST of the shopkeeper = ₹ 135

The amount of tax (under GST) paid by the shopkeeper to the Central Government

= Output CGST – input CGST

$$= ₹135 - ₹\, \frac{9}{100}x = ₹\left(135 - \frac{9}{100}x\right).$$

According to given, $135 - \frac{9}{100}x = 27$

$\Rightarrow \frac{9}{100}x = 108 \Rightarrow x = 1200.$

Thus, the shopkeeper purchased the article from the wholesaler for ₹1200.

$$\text{CGST} = 9\% \text{ of } ₹1200 = ₹108,$$

$$\text{SGST} = 9\% \text{ of } ₹1200 = ₹108.$$

$\therefore$ The amount inclusive of tax (under GST) at which the shopkeeper purchased the article from the wholesaler

= Cost of the article to the shopkeeper + GST paid by the shopkeeper

= ₹1200 + ₹108 + ₹108 = ₹1416.

EXERCISE 15.1

1. A manufacturer sells a T.V. to a dealer for ₹18000 and the dealer sells it to a consumer at a profit of ₹1500. If the sales are intra-state and the rate of GST is 12%, find:
   (*i*) the amount of GST paid by the dealer to the State Government.
   (*ii*) the amount of GST received by the Central Government.
   (*iii*) the amount of GST received by the State Government.
   (*iv*) the amount that the consumer pays for the T.V.
2. A shopkeeper buys a camera at a discount of 20% from a wholesaler, the printed price of the camera being ₹1600. The shopkeeper sells it to a consumer at the printed price. If the sales are intra-state and the rate of GST is 12%, find:
   (*i*) GST paid by the shopkeeper to the Central Government.
   (*ii*) GST received by the Central Government.
   (*iii*) GST received by the State Government.
   (*iv*) the amount at which the consumer bought the camera.

3. A manufacturer sells a washing machine to a wholesaler for ₹15000. The wholesaler sells it to a trader at a profit of ₹1200 and the trader sells it to a consumer at a profit of ₹1800. If all the sales are intra-state and the rate of GST is 12%, find:

   (i) the amount of tax (under GST) received by the State Government from the wholesaler.

   (ii) the amount of tax (under GST) received by the Central Government from the trader.

   (iii) the amount that the consumer pays for the machine.

4. A dealer buys an article at a discount of 30% from the wholesaler, the marked price being ₹6000. The dealer sells it to a consumer at a discount of 10% on the marked price. If the sales are intra-state and the rate of GST is 5%, find:

   (i) the amount paid by the consumer for the article.

   (ii) the tax (under GST) paid by the dealer to the State Government.

   (iii) the amount of tax (under GST) received by the Central Government.

5. The printed price of an article is ₹50000. The wholesaler allows a discount of 10% to a shopkeeper. The shopkeeper sells the article to a consumer at 4% above the marked price. If the sales are intra-state and the rate of GST is 18%, find:

   (i) the amount inclusive of tax (under GST) which the shopkeeper pays for the article.

   (ii) the amount paid by the consumer for the article.

   (iii) the amount of tax (under GST) paid by the shopkeeper to the Central Government.

   (iv) the amount of tax (under GST) received by the State Government.

6. A retailer buys a T.V. from a wholesaler for ₹40000. He marks the price of the T.V. 15% above his cost price and sells it to a consumer at 5% discount on the marked price. If the sales are intra-state and the rate of GST is 12%, find:

   (i) the marked price of the T.V.

   (ii) the amount which the consumer pays for the T.V.

   (iii) the amount of tax (under GST) paid by the retailer to the Central Government.

   (iv) the amount of tax (under GST) received by the State Government.

7. A shopkeeper buys an article from a manufacturer for ₹12000 and marks up it price by 25%. The shopkeeper gives a discount of 10% on the marked up price and he gives a further off-season discount of 5% on the balance to a customer of T.V. If the sales are intra-state and the rate of GST is 12%, find:

   (i) the price inclusive of tax (under GST) which the consumer pays for the T.V.

   (ii) the amount of tax (under GST) paid by the shopkeeper to the State Government.

   (iii) the amount of tax (under GST) received by the Central Government.

8. A manufacturer marks an article at ₹5000. He sells it to a wholesaler at a discount of 25% on the marked price and the wholesaler sells it to a retailer at a discount of 15% on the marked price. The retailer sells it to a consumer at the marked price. If all the sales are intra-state and the rate of GST is 12%, find:

   (i) the amount inclusive of tax (under GST) which the wholesaler pays for the article.

   (ii) the amount inclusive of tax (under GST) which the retailer pays for the article.

   (iii) the amount of tax (under GST) which the wholesaler pays to the Central Government.

   (iv) the amount of tax (under GST) which the retailer pays to the State Government.

9. The printed price of an article is ₹40000. A wholesaler in Uttar Pradesh buys the article from a manufacturer in Gujarat at a discount of 10% on the printed price. The wholesaler sells the article to a retailer in Himachal at 5% above the printed price. If the rate of GST on the article is 18%, find:

   (i) the amount inclusive of tax (under GST) paid by the wholesaler for the article.

   (ii) the amount inclusive of tax (under GST) paid by the retailer for the article.

   (iii) the amount of tax (under GST) paid by the wholesaler to the Central Government.

   (iv) the amount of tax (under GST) received by the Central Government.

10. A shopkeeper in Delhi buys an article at the printed price of ₹ 24000 from a wholesaler in Mumbai. The shopkeeper sells the article to a consumer in Delhi at a profit of 15% on the basic cost price. If the rate of GST is 12%, find:
   (i) the price inclusive of tax (under GST) at which the shopkeeper bought the article.
   (ii) the amount which the consumer pays for the article.
   (iii) the amount of tax (under GST) received by the State Government of Delhi.
   (iv) the amount of tax (under GST) received by the Central Government.
11. Kiran purchases an article for ₹ 5310 which includes 10% rebate on the marked price and 18% tax (under GST) on the remaining price. Find the marked price of the article.
12. A shopkeeper buys an article whose list price is ₹8000 at some rate of discount from a wholesaler. He sells the article to a consumer at the list price. The sales are intra-state and the rate of GST is 18%. If the shopkeeper pay a tax (under GST) of ₹72 to the State Government, find the rate of discount at which he bought the article from the wholesaler.

Answers

1. (i) ₹ 90	(ii) ₹ 1170	(iii) ₹ 1170	(iv) ₹ 21840		
2. (i) ₹ 19.20	(ii) ₹ 96	(iii) ₹ 96	(iv) ₹ 1792		
3. (i) ₹ 72	(ii) ₹ 108	(iii) ₹ 20160	**4.** (i) ₹ 5670	(ii) ₹ 30	(iii) ₹ 135
5. (i) ₹ 53100	(ii) ₹ 61360	(iii) ₹ 630	(iv) ₹ 4680		
6. (i) ₹ 46000	(ii) ₹ 48944	(iii) ₹ 222	(iv) ₹ 2622		
7. (i) ₹ 14364	(ii) ₹ 49.50	(iii) ₹ 769.50			
8. (i) ₹ 4200	(ii) ₹ 4760	(iii) ₹ 30	(iv) ₹ 45		
9. (i) ₹ 42480	(ii) ₹ 49560	(iii) ₹ 1080	(iv) ₹ 7560		
10. (i) ₹ 26880	(ii) ₹ 30912	(iii) ₹ 432	(iv) ₹ 2880		
11. ₹ 5000	**12.** 10%				